

Appl. No. 10/663,376
Amdt. dated December 23, 2004
Reply to Office action of August 23, 2004

In the specification:

Page 1, line 34, through page 2, line 33, please amend the paragraphs [0006] and [0007] as follows:

[0006] When the wafer is measured, moving the wafer stage within its plane, after the position and the direction are fitted, the stage is lifted to contact the tip of the probe needle to the pad on the surface of the wafer. But the electrical resistance of the contact is large because natural oxide film sticks to the surface of the pad as the ~~waver~~ wafer is exposed in the atmosphere. It is necessary to expose the metallic surface of the pad in order to connect the probe needle electrically to the pad breaking through the natural oxide film by the probe needle. Therefore, after contacting the pad with probe needle once by raising the stage, furthermore, the stage is raised again. In this way, electrical contact is satisfied because the oxide film on the surface of the pad is scraped by probe needle.

[0007] By the way, there are two types of probe card. The probe card of the first type is of the cantilever type, wherein the probe needle comes out of the baseboard in the side oblique direction. The probe card of the second type is of the vertical needle type, wherein the probe needle comes out of the baseboard in the vertical direction. In the case of the cantilever type, probe needle can scrape an oxide film easily & sliding on the pad

Page 2 — RESPONSE (U.S. Patent Appln. S.N. 10/663,376)
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according to the rise of the stage because the probe needle comes out of the board obliquely. In the case of the vertical needle type, contact defect is often caused because the oxide film stuck to the surface of the pad cannot be removed. The probe needle hardly slides on the pad as the probe needle contacts vertically to the pad. In order to solve this problem, in "Semiconductor device measurement device" disclosed in the US patent application 2001-0028255, the oxide film stuck to the surface of the pad is removed by turning probe needles.

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